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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Explanation of Significant Differences
Hebelka Auto Salvage Yard Site
Weisenburg Township, Lehigh County, PA

DATE: MAR 18 1993

FROM: Thomas C. Voltaggio, Director
Hazardous Waste Management Division (3HW00)

TO: Stanley L. Laskowski
Acting Regional Administrator

Attached is an "Explanation of Significant Differences" (ESD) for the Hebelka Auto Salvage Yard Site. The ESD outlines recommended changes to the remedial action previously approved in the March 31, 1989 Record of Decision (ROD) for the treatment of contaminated soil at the site. The recommended change is cost effective, and protective of both the public's health and the environment. This ESD was also reviewed and commented on by the State and has been modified to reflect their appropriate concerns. It is now submitted for your consideration.

Upon the approval of the ESD by the Regional Administrator, a public notice will be issued in local area newspapers and a copy of the final ESD will be incorporated into the Administrative Record.

W. Laskowski for SLL Concur

Non-concur

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**U. S. ENVIRONMENTAL PROTECTION AGENCY, REGION III
EXPLANATION OF SIGNIFICANT DIFFERENCES
HEBELKA AUTO SALVAGE YARD SITE**

INDEX TO THE ADMINISTRATIVE RECORD:

1. (Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites, OSWER Directive #9355.4-02), from Henry L. Longest II, Director, Office of Emergency and Remedial Response, Bruce Diamond, Director, Office of Waste programs Enforcement to Director, Hazardous Waste Management Division, Region III, et al, dated 9/ /89, memorandum
2. (Update on OSWER Soil Lead Cleanup Guidance, regarding OSWER Directive #9355.4-02) from Don Clay, Assistant Administrator, Solid Waste and Emergency Response to Addressees, dated 8/29/91, memorandum
3. (Soil Volume Versus Cost Analysis for Onsite and Offsite Treatment Scenarios Letter Report, Hebelka Auto Salvage Yard, Lehigh County, Pennsylvania), prepared by Halliburton NUS Environment Corporation under EPA contract for Frederick N. Mac Millan, Remedial Project Manager, EPA Region III, dated 4/15/92, letter report
4. (Technical Direction Memorandum) (#7) from Frederick N. Mac Millan, Remedial Project Manager, EPA Region III to Gordon J. Ruggaber, P.E., Halliburton NUS Environment Corporation, dated 7/14/92, memorandum
5. (Letter Report Summarizing XRF Verification by ICP Analysis and Revised Soil Volume Estimates Based on XRF/ICP and TCLP Results, Hebelka Auto Salvage Yard, Lehigh County, Pennsylvania), prepared by Halliburton NUS Environment Corporation under EPA contract for Frederick N. Mac Millan, Remedial Project Manager, EPA Region III, dated 7/15/92, letter report
6. (Review of Explanation of Significant Differences - Lead-in-Soil Issue - Hebelka Auto Salvage Yard Site), from Nancy Rios, Toxicologist, Technical Support Section, EPA Region III to Frederick N. Mac Millan, Remedial Project Manager, EPA Region III, dated 1/20/93, memorandum
7. (Comments to Draft Explanation of Significant Differences from ROD #1 December 21, 1992, Hebelka Auto Salvage Yard NPL Site, Weisenberg Township, Lehigh County) from Meg Mustard, Project Officer, Commonwealth of Pennsylvania, Department of Environmental Resources to Frederick N. Mac Millan, Remedial Project Manager, EPA Region III, dated 12/29/92, letter

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8. (Response to Comments to Draft Explanation of Significant Differences from ROD #1, Hebelka Auto Salvage Yard NPL Site, Weisenberg Township, Lehigh County) from Frederick N. Mac Millan, Remedial Project Manager, EPA Region III to Meg Mustard, Project Officer, Commonwealth of Pennsylvania, Department of Environmental Resources, dated 2/4/93, letter

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**EXPLANATION OF SIGNIFICANT DIFFERENCES FROM ROD #1
HEBELKA AUTO SALVAGE YARD SITE
WEISENBURG TOWNSHIP, LEHIGH COUNTY, PA**

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EXPLANATION OF SIGNIFICANT DIFFERENCES FROM ROD #1
HEBELKA AUTO SALVAGE YARD SITE
WEISENBURG TOWNSHIP, LEHIGH COUNTY, PA

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**EXPLANATION OF SIGNIFICANT DIFFERENCES FROM ROD #1
HEBELKA AUTO SALVAGE YARD SITE
WEISENBURG TOWNSHIP, LEHIGH COUNTY, PA**

I. Introduction

The remedial alternative described in the Record of Decision (ROD), March 1989, for Operable Unit #1 (OU#1) or "ROD #1" for the Hebelka Auto Salvage Yard Superfund Site (the "Site" or "Hebelka Site") called for removal of all lead-contaminated soils from the Site at or above 560 mg/kg ("milligrams per kilogram" (mg/kg), also equivalent to "parts per million" (ppm) or "milligrams per liter" (mg/l)), the risk-based cleanup level established for the Site. The ROD also specified onsite fixation or treatment of lead-contaminated soils that could not meet the Extraction Procedure (EP) Toxicity criterion of 5.0 mg/l for lead (See 40 C.F.R. § 261.24). Guidance, from the United States Environmental Protection Agency ("EPA") Headquarters, issued after ROD #1, in September 1989 and August 1991, induced EPA Region III to reduce the target cleanup level for soil at the Site to 500 mg/kg. In addition, studies conducted by EPA Region III in 1992 led to more refined estimates of the amount of contaminated soil requiring treatment and to a different remedial design approach, calling for the actual treatment of the soils to be carried out at a location away from the Hebelka Site.

This Explanation of Significant Differences (ESD) was prepared in accordance with the requirements of section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), and section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Section 300.435(c)(2)(i). This decision document explains two significant (but not fundamental) differences from the remedial alternative selected in ROD #1.

The first difference deals with the cleanup level for lead in the soils which was specified in ROD #1 as 560 mg/kg. This level was based on health risk calculations which considered a safe potential soil ingestion scenario. As explained below, EPA Region III has since adopted a maximum cleanup level of 500 mg/kg for lead in soils at the Site.

The second change deals with the actual means of implementing the remedial alternative which addresses lead-contaminated soil onsite. This treatment alternative describes the excavation of lead-contaminated soil and onsite treatment, i.e., onsite mixing of the soil with Portland cement or some lime-based compound(s) to sufficiently immobilize the lead in the soil and the transportation of this "matrix" of soil, lead and fixative agents to a landfill permitted to accept it. Under a revised scenario adopted during the Remedial Design and in this

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ESD, the actual process of "fixing" the lead in the soil with immobilizing agents will be performed offsite instead of onsite.

II. Summary of Site History, Contamination Problems, and Selected Remedies

The Hebelka property occupies approximately 20 acres within the headwaters of the Iron Run subdrainage basin. Topographically the property is positioned on the south side of a low, moderately steep hill north of Interstate Highway 78 and Old Route 22 (the two highways are parallel to each other running generally east-west) approximately 9 miles west of Allentown, Pennsylvania. The property is bordered on the south by Old Route 22 and Interstate Highway 78; on the east by Tercha Road and an agricultural field; on the north by a second agricultural field; and on the west by a Township Route T-541 and open, rural land. The Site is described more fully on page 1 and Figures 1 and 2 (pages 2 and 3) in ROD #1.

On December 15, 1985, the EPA Region III Field Investigation team (FIT III) visited the Site for the purpose of conducting a Site Inspection (SI). The Site Inspection report revealed the presence of two battery piles at the Site, termed the eastern pile and the western pile. The major onsite contaminant identified during the Site Inspection was lead in soils downgradient from the battery piles. Battery liquid and residual solid waste samples exhibited high concentrations for lead and acidity. Lead concentrations in the battery liquids ranged between 7,320 ug/l (parts per billion) and 1,100,000 ug/l, and acidity values were as high as 66 mg/l (as calcium carbonate (CaCO_3)). Lead in the residual solids ranged between 110,000 mg/kg and 361,000 mg/kg with acidity values up to 210 mg/l. The Toxicity Characteristic Leaching Procedure (TCLP) analyses of representative battery pile materials yielded lead concentrations from 22,100 ug/l to 48,600 ug/l.

The Hebelka Site was added to the National Priorities List (NPL) on August 21, 1987. 52 Fed. Reg. 27,620-41, (1987) (codified at 40 C.F.R. Part 300 app. B). A multi-phase Remedial Investigation and Feasibility Study (RI/FS) was conducted between March 1987 and July 1991 to examine and define the nature and extent of contamination and to identify alternatives for remediating the site conditions. The Phase I investigation in 1987 found lead concentrations were highest in surface soil samples collected from soil borings located under the battery piles (typical high values found were 5,090, 15,000 and 65,100 mg/kg). The Phase II investigation was undertaken in 1991 to further delineate the horizontal breadth of contamination, primarily based on surface samples, and identified several "hot spots" with lead concentrations greater than 500 mg/kg west of the westernmost battery pile and east along Tercha Road.

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In June of 1992, an additional study was undertaken to better define the vertical extent of contamination and to better estimate the quantities of contaminated soil which would have to be excavated, treated and/or disposed during the remedial action. Current estimates place that number at 3,300 cubic yards of lead-contaminated soil, of which approximately 2,500 cubic yards will require treatment prior to disposal (Technical Direction Memorandum (#7) to Halliburton NUS Corporation, EPA, July 14, 1992; Letter Report Summarizing XRF Verification by ICP Analysis and Revised Soil Volume Estimates Based on XRF/ICP and TCLP Results, July 15, 1992). Original estimates in ROD #1 placed the volume of contaminated soil at approximately 6,900 cubic yards, with an estimated 5,000 cubic yards requiring treatment prior to disposal.

The primary health threat posed by the Hebelka Site continues to be the ingestion of lead-contaminated soil particles and/or battery pile material. The remedial alternatives posed in ROD #1 were based on the original risk assessment which considered carcinogenic and non-carcinogenic health risks for both children and adults. That study indicated that leaving a lead concentration of 560 mg/kg in soil was an acceptable risk under a potential soil ingestion scenario.

Selected Remedy

The remedy called for in ROD #1 prevents the ingestion of lead-contaminated particles of battery pile materials and/or soil in excess of health-based levels by removing them from the Site and treating and/or disposing of them using methods protective of public health and the environment. The major components of the remedy called for in ROD #1 are:

- (1) Removal of the battery casings from the Site and recycling the casings. If recycling is impractical, the casings will be disposed in a RCRA landfill.
- (2) Excavation of lead-contaminated soil, onsite fixation of the soil utilizing a cement or lime-based fixation process, and depositing the fixation matrix in a RCRA Subtitle D permitted municipal landfill.
- (3) Soil backfill and revegetation.

III. Description of Significant Differences and the Basis for those Differences

The remedial action to be taken at the Site will differ from the remedy presented in ROD #1, in the following significant respects:

- (1) The lead in soil cleanup level will be lowered from 560 mg/kg to 500 mg/kg. Following the removal of the battery

pile material from the Site, the lead-contaminated soil will be excavated and replaced with clean soil, such that the highest level of lead in soil remaining onsite will not exceed 500 mg/kg.

(2) Lead-contaminated soil requiring treatment to immobilize or "fix" the lead prior to disposal will be excavated and transported to an offsite facility for treatment prior to disposal in a permitted landfill. No treatment facility to fix the lead-contaminated soils will be constructed or operated onsite.

Basis of Differences

The Hebelka Site occupies a residential setting, with at least one of the property owners still living there. Three residential properties abut the Hebelka Site.

In developing ROD #1, Region III relied on a health-based risk assessment, which evaluated a possible soil ingestion scenario and determined that 560 mg/kg (ppm) of lead remaining onsite in soil was safe. In September 1989, after ROD #1, EPA Region III received a directive entitled Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites from the EPA Office of Solid Waste and Emergency Response (OSWER) in Washington D.C. (OSWER Directive #9355.4-02). This directive set interim cleanup levels for lead in soil at 500 to 1,000 ppm as "...protective for direct contact at residential settings." This guidance adopted a 1985 Centers for Disease Control (CDC) recommendation which stated that "...lead in soil and dust appears to be responsible for blood (lead) levels in children increasing above background levels when the concentration in the soil or dust exceeds 500 to 1000 ppm." The guidance went on to state that "[b]lood-lead testing should not be used as the sole criterion for evaluating the need for long-term remedial action ..." and mentioned the Uptake Biokinetic Model (UBK) which had previously been used regarding a site-specific risk assessment at that time.

On August 29 1991, OSWER issued an update regarding that same directive (OSWER Directive #9355.4-02) including a revision citing the UBK as "the best available approach ..." and "as a risk assessment tool to predict blood lead levels and aid the risk management decision on soil lead cleanup levels at CERCLA/RCRA sites which are characterized as residential." This update went on to state that "[w]hen the model is run using this (a model projection) benchmark as well as each of the model's default parameters (i.e., no site-specific data is input), an acceptable soil level of approximately 500 ppm is predicted for lead." In applying the OSWER Directive (#9355.4-02), EPA Region III has determined that the default parameters of the UBK model are appropriate for this residential setting in the absence of site-specific data. Consequently, Region III is revising the

cleanup level for lead-contaminated soils at the Hebelka Site to 500 mg/kg (ppm).

Changing the remedial action soil cleanup level to 500 mg/kg is not expected to significantly impact the cost, schedule, or implementation of the remedial action (Soil Volume Versus Cost Analysis for Onsite and Offsite Treatment Scenarios Letter Report, April 15, 1992). The revised cleanup level will also provide a greater degree of protectiveness than the original health-based level of 560 mg/kg described in ROD #1.

The second difference between ROD #1 and the planned remedial action concerns changing the location of the treatment of RCRA-hazardous lead-contaminated soils from a constructed soil treatment facility operated onsite to a permitted treatment facility located offsite. This approach, developed during the remedial design, does not fundamentally alter the conduct of the remedy as described in ROD #1; the soil fixation and landfiling scenario remains essentially the same and an offsite approach is as readily implementable. Transport of this Toxic Characteristic (TC) waste for offsite treatment may be subject to the transportation requirements found at 40 C.F.R. Part 263 and applicable Department of Transportation regulations as well as state ARARs for hazardous waste manifesting and spill control. Offsite treatment must also be performed in compliance with EPA's Revised Procedures for Implementing Off-Site Response Actions, Nov. 13, 1987, OSWER Directive #9834.11.

There will also be several advantages to using the offsite approach:

- The environmental threat (lead-contaminated soil) is promptly removed from the Site after excavation, significantly advancing the "de facto" remediation of the site. Stockpiling of RCRA hazardous/non-hazardous soils onsite is expected to be minimal because of planned "in situ" soil testing.
- This approach utilizes a permanent, full-scale, operating treatment facility to "fix" the soil prior to disposal rather than logistically challenging a contractor to transport and construct temporary facilities to treat the soil onsite and still incur transportation costs by having to take the treated soil to a landfill for disposal. An analysis of various soil remediation scenarios during the remedial design indicated that total disposal costs involving onsite treatment can exceed costs involving offsite treatment (Soil Volume Versus Cost Analysis for Onsite and Offsite Treatment Scenarios Letter Report, April 15, 1992).
- A single Treatment, Storage and Disposal Facility (TSDF) may be able to accept both the hazardous soil for treatment and

later disposal and the non-hazardous soil for direct disposal. This scenario could simplify the logistics, shorten the cleanup schedule relative to the Site itself and potentially result in overall cost savings on this project.

IV. Support Agency Comments

Comments from PADER were solicited for this ESD and are available for review in the Administrative Record.

V. Affirmation of Statutory Determinations

This ESD notifies the public of certain significant differences in the remedy to be implemented at the Site, primarily a more protective cleanup level for lead-contaminated soil at the site consistent with current EPA national guidance and a change concerning where the lead-contaminated soil is actually treated prior to disposal. However, the changes noted in this ESD do not constitute fundamental changes in the remedy selected in ROD #1.

Upon reevaluating the circumstances at the Site, and the changes that have been made to the selected remedies, EPA believes that this remedy remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

VI. Administrative Record

This document, references cited in this document, comments by PADER on the draft ESD, and any response to the comments of PADER on this document will be made a part of the Administrative Record file for the Site and thus will be available for public review at the following locations:

Weisenburg Township
Municipal Building
RD 1,
Fogelsville, PA 18051
(215) 285 6660

Hours: Monday-Friday 8:00 am - 12:00 noon

Anna M. Butch (3HW14)
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RTOS
(3HW13)
NR 2/1/93

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Incurrence

MAGILLAN	BURNS	RUGGERO	RODRIGUES	HUMPHRIES	NAYLOR	SCHAUL	FERDAS
(3HW22)	(3HW22)	(3RC31)	(3RC31)	(3HW50)	(3HW63)	(3HW20)	(3HW02)
1/20/93	1/29/93	2/3/93	2/1/93	2/1/93	2/16/93	2/19/93	2/24/93

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